

## **REMARKS**

Claims 1-4, 6-12, and 14-20 are pending in the application. Claims 1, 9 and 17 are independent. Claims 5 and 13 are cancelled. Claims 1-4, 6-12, and 14-20 stand rejected.

### ***Claim Rejections – 35 USC § 101***

Claims 1-8 and 17-20 stand rejected under 35 U.S.C. § 101 purportedly because the claimed invention is directed to non-statutory subject matter.

The Office asserted that:

In this particular case, regarding the first test, in performing the steps of the claimed subject matter, there is no requirement that a machine be used, thus the claims are not considered sufficiently tied to another statutory class. Regarding the second test, since the claimed subject matter may be performed using only human intelligence, the steps do not sufficiently transform the underlying subject matter to be statutory.

Action, p. 3. In response, Applicants have amended the claims to tie each claim to a machine. As such, Applicants respectfully request reconsideration and withdrawal of the rejection.

### ***Claim Rejections – 35 USC § 112***

Claims 1 and 9 stand rejected under 35 USC § 112, 2nd paragraph. The Office contends that the terms "similarity of behavior", "intermediate performance", "being related to" and "successive intermediate dates" in claims 1 and 9 are unclear and render the claims indefinite. Although Applicants have in part amended the claims to clarify, Applicants respectfully disagree. Applicants submit that the examiner has failed to consider the claim language as a whole but rather has lifted particular terms out of context. Claim 1 as amended, for example, recites "the behavior of the intermediate valuation of the at least two underlying assets, each intermediate valuation being related to the time period between two successive intermediate dates." As such the phrase "similarity of behavior" refers to the similarity of changes in valuation. The term intermediate is further defined in the claim as

related to the time period between successive intermediate dates. As such, Applicants submit that the claim language is definite and request reconsideration.

Claims 8 and 16 stand rejected under 35 USC § 112, 2<sup>nd</sup> paragraph. In particular, the Office asserts the “consensus mechanism” is unclear. Applicants respectfully disagree and reserve the right to claim the subject matter at a later date. But in an effort to advance prosecution, Applicants have canceled the claims.

Claims 18 stands rejected under 35 USC § 112, 2nd paragraph. In particular, the Office asserts that the term “implied volatility” is unclear. Applicants respectfully disagree and assert that implied volatility is a well-known term of art. Applicants direct the Office, for example, to [http://en.wikipedia.org/wiki/Implied\\_volatility](http://en.wikipedia.org/wiki/Implied_volatility) for a discuss of the meaning of the term. Reconsideration is respectfully solicited.

Claims 2-8, 10-12, 14, 15, and 17-20 stand rejected for their dependency from a rejected base claim. Applicants submit that the remarks make clear that the independent and dependent claims are not indefinite. Reconsideration is respectfully requested.

#### ***Claim Rejections – 35 USC § 103***

Claims 1-4, 6-12 and 14-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen US 2002/0123951 A1 in view of Lange 6,321,212.

Regarding claim 1, the Office asserts that Olsen discloses a method for correlation risk hedging. In particular, the Office asserts that Olsen teaches the claimed:

providing a product having a calculated payoff value wherein the payoff value is a function of the similarity of the behavior of the intermediate valuation of the at least two underlying assets.

The Office asserts that the above claim language is taught by Olsen paragraph [0004] which states "[t]he present invention determines a portfolio from past values of underlyings and from views about the future values of underlyings." Action, p. 5. However, the claim further clarifies that the similarity of the behavior of the intermediate valuations is related to a time

period between two successive intermediate dates. By contrast, the cited portion of Olsen teaches that a past date range and a future date range. Consequently, it cannot teach similarity between two successive intermediate dates. Moreover, Olsen appears to teach comparing a past underlying to the same underlying in the future. For that reason, it also cannot teach comparing the similarity of *two* underlying assets.

Moreover, the Office further cites to Olsen paragraph [0021] (the action incorrectly cited to paragraph [0004] a second time) which states: "Dynamic hedging with trading models is an automatic consequence of the system-- since the portfolio can have a position in the US Dollar and a trading model against the US Dollar as two separate assets with different weights in the portfolio." As such Olsen appears to teach hedging by offsetting one asset with another asset that has a model with a complimentary or different behavior. By contrast, the claim recites that the payoff value is a function of *the similarity* of the behavior of the intermediate valuation. This additional reason appears to teach away from the invention of claim 1.

The Office admits that Olsen does not teach all of the claim limitations. Consequently, the Office further cites to Lange and assert that Lange teaches "[t]he distribution will typically be defined for events of economic interest for investment by traders having the expectation of a return or a reduction of risk ("hedging"). For example, the distribution can be based upon the values of stocks, bonds, futures, and foreign exchange rates." Citing Lange col. 23 lines 44-49. However, other than stating that a distribution can be based on a foreign exchange rate, the cited portion of Lange does not cure the deficiencies noted above with respect to Olsen.

For at least the foregoing reasons, Applicants submit that claim 1 is not rendered obvious by Olsen in view of Lange.

Inasmuch as claims 2-4, 6, 7 and 9 depend from claim 1, Applicants submit that they also patentably define over Olsen in view of Lange for at least the same reasons as analyzed above.

Regarding claim 9, the Office cites to the same paragraphs of Olsen as teaching:

determining a payoff value for the financial product wherein the payoff value is a function of the similarity of the behavior of the intermediate performances of the at least two underlying

assets, each intermediate performance being related to the time period between two successive intermediate dates,

The analysis provided with respect to claim 1 similarly applies to this analysis, *mutatis mutandis*. For at least the reason, Applicants submit that claim 9 is not rendered obvious by Olsen in view of Lange.

In addition to the above reason, Applicants respectfully submit that the cited references fail to teach or disclose:

determining a payoff value for the financial product wherein the payoff value is a function of the similarity of the behavior of the intermediate performances of the at least two underlying assets, each intermediate performance being related to the time period between two successive intermediate dates,

For this limitation, the Office cites to Olsen claim 36. However, claim 36 states:

**36.** A programmed computer for determining a portfolio, comprising at least one memory having at least one region storing computer executable program code and at least one processor for executing the program code stored in said memory, wherein the program code includes:

- (a) code to input past portions of one or more time series of one or more underlyings;
- (b) code to input one or more views about the future of said one or more time series; and
- (c) code to determine one or more future paths of said one or more time series from said past portions and said views.

Nothing in claim 36 of Olsen mentions a financial product that has a payoff value. Rather it teaches determining a portfolio. Nor does it teach that a payoff value is a function of intermediate performances of two underlying assets. Applicants submit that there is very little correlation between what is claimed in Applicants' claim 9 and claim 36 of Olsen.

Inasmuch as claims 8-12 and 14-16 depend from claim 1, Applicants submit that they also patentably define over Olsen in view of Lange for at least the same reasons as analyzed above.

Regarding claim 17, the Office asserts that Olsen discloses a product for correlation risk hedging comprising a price wherein the price is a function of an implied price correlation over a set term of at least two assets said price determined on a computing device wherein the computing devices determines the implied price correlation of said at least two assets, citing Olsen Claim 68. However, the cited portion Olsen teaches a method for *determining a portfolio*. In other words, rather than teaching a computer-based product that has a priced base on the price correlation of two assets over a set term, Olsen is discloses how to figure out what should be in a portfolio by performing a simulation. Moreover, the claim requires the price correlation for a set term. Nothing in claim 68 of Olsen describes a price based on an implied price correlation for a set term. For at least the forgoing reason, Applicants submit that claim 17 is not rendered obvious by Olsen in view of Lange for at least the foregoing reason. Reconsideration is respectfully requested.

Inasmuch as claims 18-20 depend from claim 17, Applicants submit that they also patentably define over Olsen in view of Lange for at least the same reasons as analyzed above.

Finally, the Office responded to the arguments raised in Applicants previous response and determine that:

applicant's argument (1) & (2), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Action, p. 20. Applicants submit that Office's analysis is improper in that regard. For example, Applicants claim 1 is a method claim that recites steps rather than just structure. It is improper to say that a structure capable of performing a method meets the limitations of a method claim. Applicants request that the Office provide legal support for the above proposition.

Moreover, Applicants submit that the limitations relied on are NOT merely statements of intended use. They are actual claim limitations. As such, the Office has the burden to

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establish that the prior art teaches all of the claim limitations, alone or in combination. For the reasons set forth above, Applicants submit that the Office has not met that burden.

### **CONCLUSION**

In the view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is in condition for allowance. Reconsideration of the application and an early Notice of Allowance are respectfully requested. In the event that the Examiner cannot allow the application for any reason, the Examiner is encouraged to contact Applicants' representative.

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